



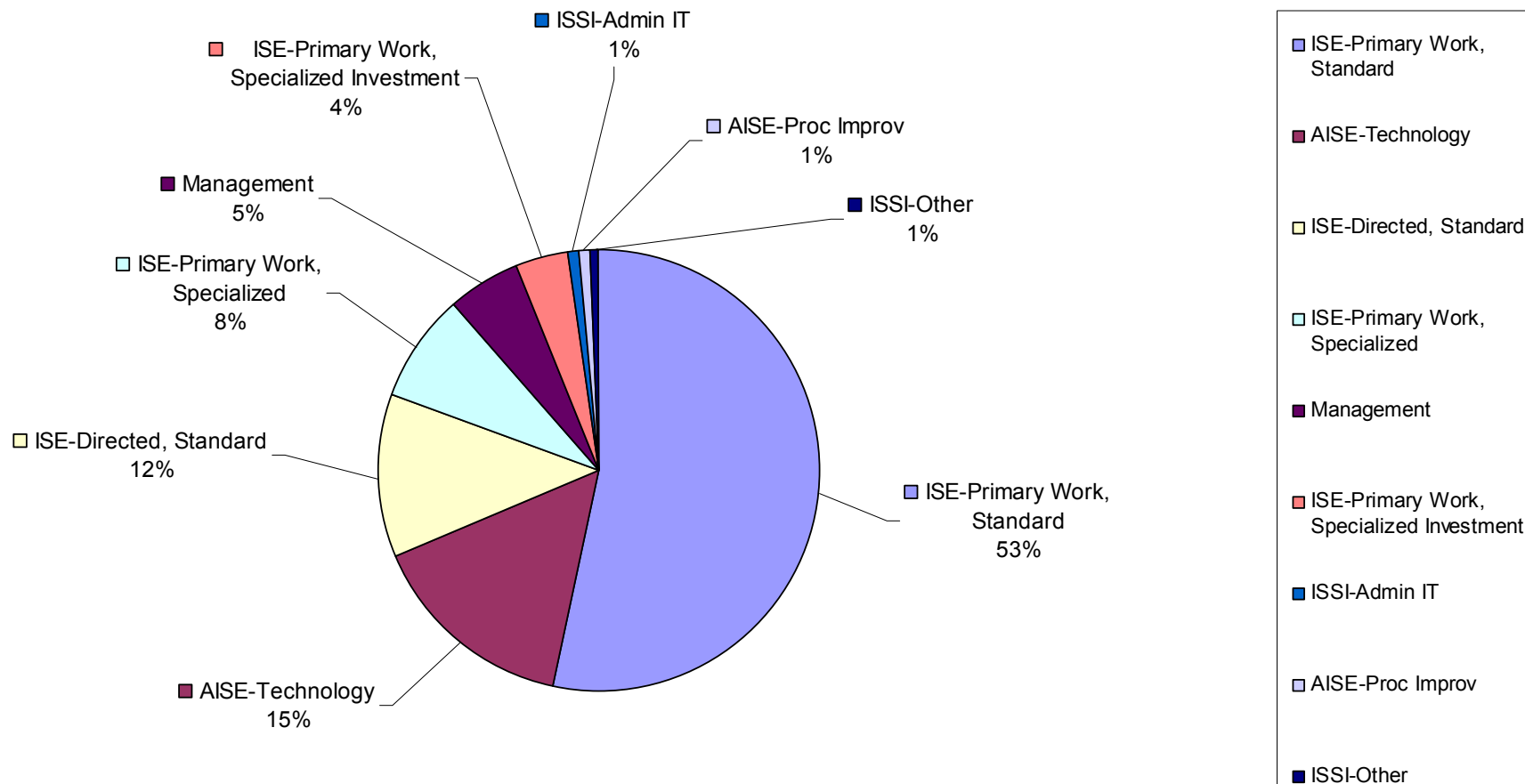
Flight Software Branch Code 582 Technical Status Review to ISD

April 27, 2004

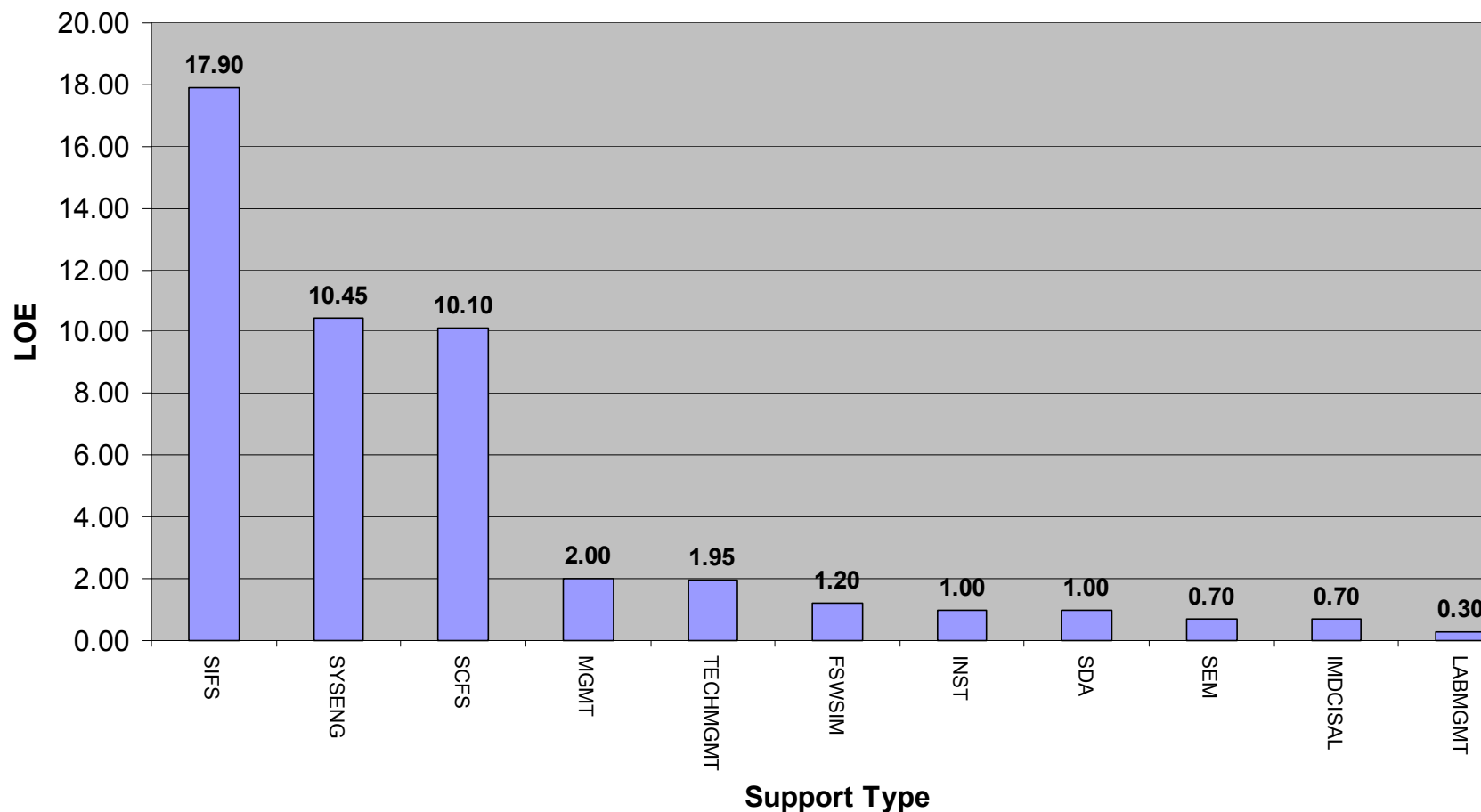
**Elaine Shell, Branch Head
Ray Whitley, Associate Branch Head
Kequan Luu, Associate Branch Head
Ron Zellar, Associate Branch Head**

Code 582 Staffing Overview

Code 582 Business Types Apr. 2004



Code 582 Support Types (Top 11 ONLY)



	AISE Technologies	AISE Mission Request	Process Improvement
Michael Aguilar	(0.30)		
Maureen. Bartho	0.50		
Dan Berry		1.00	
Mike Blau	(1.00)		
Leslye	(1.00)		
Tom Clement			0.30
Alan Cudmore			
Cindy Firman	0.10		0.30
Tina Fredo			0.40
Nancy Goodmar	0.50		
Stephe Leake	(0.40)		
Dave Leucht			0.20
Kequan	0.10		
Dave McComas	0.35		
Dwaine Molock	(0.30)		
Ken Rehm	(1.00)		
Susie Strege	0.80		
J-P Swinski	0.70	0.10	
Ray Whitely	0.10	0.10	
Jonathan Wilmot	0.70		
Ji-Wei Wu	1.00		
Ron Zellar		0.40	
Total Change	0.85	1.60	1.20

FSW DEVELOPMENTS

<i>FSW Developments</i>	Feb	Mar	Apr	ISD Review	CS	CS Chg.	SSC	Status
JWST ISIM FSW Development	G	G	G	Sep-01	3.0	0.0	16.0	FSW C8 delivered to BT (includes TMON). SIDU Requirements draft looks good. FSW SRR 4/28/04.
ST-5	G	G	G	Oct-02	2.5	-1.0	3.0	Pegasus XL launch vehicle confirmed for 12/05. New orbit and mission operations is expected to impact science processing FSW only. Budget reworked (no new costs); schedule reworked. Delivered Build 1.10 (includes all reqmts. and known DCRs) for test.
Swift BAT	G	G	G	Jun-02	4.5	-0.5	3.0	Last planned BAT build going to S/C (BTs will continue in parallel). Includes fix for PCI bus lockup problem that was causing the watchdog resets. UG is 85% complete.
SDO	G	G	G	Apr-04	6.5	2.5	3.5	FSW Requirements near completion for all CPU. MAP & ST-5 reuse WTs active. SDN build 1 complete. FSW PDR preparations underway.
GPM	G	G	G		1.5	-1.0	2.0	Project is considering RSDO option. Budget and schddule reworked 2 ways: baseline and technology descope. Project has asked that FSW team "stay the course" for FSW PDR 9/04.
• FSW Devel. Staff Total					18.0	0.0	27.5	
Local FSW Devel. Task Oversight								
ST-7 DRS	G	G	G		0.0	0.0	~4	Supported FSW CDR 4/22.
HH SET	G	G	G		0.0	0.0	~2	New task in place. Dave Leucht COTR.

ON-ORBIT FSW MAINTENANCE

<i>On-orbit FSW Maint. and Maint. Preparations</i>								
<i>3rd FSW Maintenance/Developer Technical Exchange 4/29/04.</i>								
	Feb	Mar	Apr	ISD Review	CS	CS Chg.	SSC	Status
UARS, SAMPEX, RXTE, FAST, TRMM, TRACE, SWAS, WIRE, Terra, WMAP, Aqua, ICESat GLAS, Cassini CAPS & CIRS, SIRTf IRAC,	G	G	G	Sep-01	1.3	0.0	12.1	Much activity in support of Aqua, Aura, Cassini CAPS and CIRS, GLAS, Terra, TRMM reentry, UARS, WIRE.
HST Payload	G	G	G		4	0.0	17.0	ACS: New positioning algorithm for filter wheel positioning uplinked and working as desired. STIS: Working s/w workaround for failed/slow lamp turn-on. NICMOS: Working fix to Intel exceptions which causes suspends. WFC3 build delivered. COS build planned.
• FSW Devel + Maint Staff Total					23.3		56.6	

FSW SYSTEMS MANAGEMENT

FSW Systems Management	Feb	Mar	Apr	ISD Review	CSs	CS Chg.	SSCs	Status
JWST ISIM FSW Mgmt.	G	G	G	Jun-01	2	0	1.5	Levels 3 and 4 FSW Requirements completed. <i>580/582 continue to cover this role.</i>
JWST SSM	G	G	G		0	0	0.25	<i>Minimal contractor support due to transition from Aura. Trying to hire Term for this pos.</i>
Swift	Y	Y	Y	Nov-01	1	0	0	1st CPU 4/28-29, T/V 5/14, PSR 6/30, ship 7/7; L=9/1+. S/C & SI FSWs functionally ready for T/V. Ops. Sim. Tests going well. Maint. plan recommendations/risks in work. John Ong 'way overloaded' -- prioritized FDCs, I&T, CCB.
SDO	G	G	G	Apr-04	1	0	0	Major s/c systems engineering issues generated from FSW SRR are resolved. Working FSW PDR contents for 582 template purposes.
GPM	G	G	G		0.3	0	0	Some work on ICDs. Impacts to desired Science file contents identified.
EOS Aura	G	G	G		0.7	0	0.7	<u>TES</u> : patch tests were successful. Reqmts. verif. Artifacts are slow but coming. <u>MLS</u> : Tests of 5 reqmts. are an issue. <u>HIRDLS</u> : upload plans are under review.
NPP	G	G	G	Nov-01	1	0	0.5	IPO sensors are delayed forcing rethink of entire I&T flow to maintain 10/06 launch. S/C assembly moving forward at BATC. ICDs ok. Monthly WT's of S/C flight code by NASA and IV&V. Much planning w/ NPOESS.
GLAST	G	G	G		0	0	2	Both S/C and LAT reviews supported by 582 ABH.
Sys. Mgmt. Staff Total					6	0	4.95	

FSW Studies Status Summary

Formal Studies	Feb	Mar	Apr	ISD Review	CSs	CS Chg.	SSCs	Status
IMDC	G	G	G		1.2	0.7		3 studies accomplished: MR2, 000, GEST
ISAL	G	G	G		0.9	0.4		2 studies accomplished: 000, LOLA
Total IMDC Missions Supported:				50	since April 2001			
Total ISAL Instruments Supported:				14	since December 2003			
Proposals	Feb	Mar	Apr	ISD Review	CSs	CS Chg.	SSCs	Status
GOES ABI instrument					0.1			Brian Rehm on SEB (June)
000					0.1			Dan Berry has supported proposal development.
MAGNUS					0.1			Dan Berry provided Technical and Cost Estimate.
SAM								582 withdrew due to lack of customer support
MMS								J-P provided technical and cost estimate.
EPIC								Out-of-house instrument proposal supported by Brian Rehm. TMR at Hdqtrs. was encouraging.
LISA								no activity
Lunar Recon.								no activity yet
HST HRV								no activity yet

Branch Initiatives (1 of 3)

FSW Advances

	Feb	Mar	Apr	ISD Review	CS	Chg. CS	SS C	
Core Flight Executive (cFE)	G	G	G		4.3	0.9	1	FSW requirements being reworked for consistency, then baseline. Some design/code is active.
OS Abstraction	G	G	G		1.2	1	1	Baseline OS Abstraction for SDNs complete. SBC capability is in work. Much internal enthusiasm.
cFE AP Plug and Play (GMSEC)	G	G	G		0.1		1	Late start. Message service complete. API definition for H&S in work.
FSW Reuse Library	G	G	G		0.1		0.5	Gforge server set-up is complete. Directory strategy and user interface being worked.
GN&C FSW Library elements	G	G	G		0.3	-0.2	0.2	Math utilities complete. Working library documentation
Dynamic Simulator Architecture (GDS)	G	G	G		1	0.5	1	Basic architecture is in place. Focus is interfaces for SDO SDNs.
Software-only Dynamic Simulator (GMSEC)	Y	G	G		0.1	0	1	Late Start. Working to host MAP ACE into GDS as prototype.
MatLab Tools								On wish list. Need GN&C support.
Autonomous Orbit Maint.								GPM resource constraints -- on hold.

Branch Initiatives (2 of 3)

FSW Advances

	Feb	Mar	Apr	ISD Review	CS	Chg. CS	SSC	
Onboard Network Services using Ethernet	G	G	G	Dec.03	0.2		0.8	2 Peer Reviews between 560 and 580 occurred. Good RFAs. Asynchronous Onboard IP/UDP services prototype complete 5/04.
CFDP	G	G	G		0.8			Flight prototype and implementation of CFDP using ASIST (584) is on schedule.
CCSDS SOIS	G	G	G		0.1		0.2	Spring meeting will be in Montreal.
RSat/MR2	Y	Y	Y		0.1			Not clear what is wanted for August 2004 demo. Staff to deliver quick C&DH demo not available.
QMS Workshop Session Topics (GSFC and JPL)	G	G	G		0.5			582 leading 2 sessions: FSW Reuse will be discussed for 1.5 days. FSW Risks will be 1 day session.

Branch Initiatives (3 of 3)

FSW Process Improvements

- **Presented FSW Branch Process Improvement Initiative to the Branch Civil Servants. Plan is to present to contractors at ISD 'all-hands'.**
- **Sat down w/ Sally G. to itemize CMMI criteria against 582 SPI plans. Schedule for CMMI ratings is VERY OPTIMISTIC.**
- **Current focus is on:**
 - FSW Test Plan and products based on use by JWST and SDO
 - FSW CM Plan, DCR process, metrics
 - FSW PDR Standard - plan to use SDO FSW PDR as prototype
 - FSW Cost Estimation
 - FSW Maintenance Requirements on FSW Developments
 - FSW Risk Management Database (QMS w/s topic)
- **Stats:**
 - 11 CCB meetings
 - 39 actions assigned, 28 actions closed
 - 71 DCRs submitted, 56 DCRs closed
 - 27 products baselined (some w/ updates since baselining)
- **FSW SPI Action Plan includes 113 additional products**

page 12